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she said she had taken out of her Tongue, above five Months after this Disaster had happened.

Evan Davies.

V. *The Postscript of a Letter from George Martin, M. D. to William Græme, M. D. F. R. S. giving an Account of the Operation of Bronchotomy, as it was performed at St. Andrews.*

P O S T S C R I P T.

I Was called to a young Lad, who being in such a good State of Health, as to be then making a Visit to some of his Comrades in another Street, was all of a sudden taken ill with a violent Trouble in his Throat; in which however, I could see nothing wrong, the *Amygdalæ*, and other Parts in view, being in all Appearance sound enough, but only looking a little drier than ordinary; without any external Tumour appearing about the *Larynx*, and no considerable Frequency or Strength in his Pulse. But he had great Pain and a *Dyspnæa*, with an Impossibility of swallowing either Liquids or Solids; every thing returning forcibly by the Mouth and Nose, when he made an Effort to get it over. From all which I reckoned it an *Angina* of one of the worst Kinds, *sine apparente tumore* (See *Hippocr. Prognost.* xxiii. 3. & *Prænot. Coac.* iii. 96.) and the Seat of the Disease in the *Larynx*,

rynæ and the Fibres common to it, and the Top of the Gullet.

Notwithstanding repeated Bloodings, Blistering betwixt his Shoulders, Cupping, &c. whereof it is needless to give you a particular Detail, the Disease continued so obstinate, and the Patient so like to suffocate, that next Day in the Afternoon his Friends, although very averse in the Morning, when I first proposed the piercing the Windpipe, at length earnestly desired that the Operation might be performed; and the poor Lad bad us try any Experiment to preserve his Life. He had good Reason so to do; for indeed, in all Probability, in a few Hours he would have been strangled to Death most miserably, *constante mente, integrisque sensibus*, as the elegant *Fernelius* (*Patholog. v. 9.*) expresseth it. Whence you see it was not out of an itching Desire of making Experiments, or a wanton Officioufness, that we directly set about the Operation. Which was done with such Success, that in less than four Days, his Breathing being perfectly easy, and his Deglutition being almost so, we removed the *Cannula*, and left the *Glottis* to do its own Office.

According to *Cælius Aurelianus* (*Acut. iii. 4.*) and the Author of the *Liber Introductorius* (cap. 13.) ascribed to *Galen*, *Bronchotomy* was proposed by *Asclepiades* (however inconsistent with his Delicacy, and the rest of his Character, the seeming Harshness of this Operation may appear) and is described and earnestly recommended by almost all the systematical Writers of Surgery from *Paulus of Ægina* (*de re Medic. vi. 33.*) and, as he says, *Antyllus*, and some other of the best Surgeons before him, down to the present Times. But when they are at so much Pains to defend the Reason-

ableness.

ableness of it, and when they shew so much Fondness of citing and telling Examples of the healing accidental Wounds of the *Trachea*, without ever mentioning their own regular Performance of the Operation (which would have been a shorter and much more effectual Recommendation of it) when I say, I consider all this, I find myself obliged to think that it has very seldom been reduced to Practice. So rare had it been that *Aretæus*, a Man of vast Judgment and Skill in Diseases (*Cur. Acut.* i. 7.) thought the Operation had never been actually done with Success. And *Cælius Aurelianus* looked on it as an impracticable Whim of *Asclepiades*. Neither *Avenzoar* (*Medic.* i. x. 14.) nor *Albucasis* (*Chirurg.* ii. 43.) knew any of their Countrymen who had undertaken it. And the *Arabians* are reputed to have been hardy enough Surgeons. The most that I know of amongst them of this Kind is in *Avenzoar*, who tried the Experiment on a Goat, and cured the Wound; which shews the Ingeniousness and Industry of the Author. For as to what you will find some Writers telling you, that *Rases* (*Contin.* vii. Fol. m. 77.) saw *Andrusus* the Physician do it (the Copy I looked into, printed at *Venice* 1505, calls him *Ancilifus*: and perhaps it should be *Antyllus* for them both) I think this flows from a mistaken Interpretation of that Author's Meaning. Since you will read the whole Context, I think you will easily perceive that all he says of the Operation is upon hearsay; and consequently, that he had only seen in Books, that such a one had done it. That most accomplished Anatomist and Surgeon *Fabricus ab Aquapendente* (*Operat. Chirurg.* xlv. p. 477.) frankly acknowledges, that neither he nor any of his Contemporaries had ever ventured

to perform it. Neither does his Successor in the Profession of Surgery, and his Rival in Anatomy, *Julius Casserius* of *Placentia* (*De Voc. Org.* i. 20.) pretend to have done it ; though he has endeavoured to illustrate the Operation by some very neat Figures ; which you will not readily suspect to be from any but dead Bodies. And next to him *M. Aurelius Severinus* (*Chirurg. Effic.* ii. 40.) who was a very judicious and learned Man, and the best and boldest Surgeon of his Time ; though he recommends it with a great deal of Warmth and Keeness, yet it seems, even in his latter Days, he never had Occasion to try it : So that the first undoubted and distinctly recorded History I can find of this Operation being actually practised, is in the learned *Anton. Musa Brasavolus* (*Com. in Hippocr. de Diet. in acut.* iv. 35.) who performed it in a desperate Squinace, when the Surgeon refused to do it ; and repeated it again in the like Case. Mr. *Arnaud* the *Frenchman* did it ; but his Patient died (See *Garengot Operat. Chirurg.* xxxi. p. 489.) However, his Countryman Mr. *Binard* had better Success (*Garengot ibid.* xxxii. p. 498.) Dr. *Freind* (*Hist. Phys.* I. p. 206.) cites *Purman* doing it : and (p. 207.) tells us of another Case communicated to him by a Surgeon whom he does not name. And besides these, I believe there are but few Instances can be produced, of any who really performed the Operation on a living Person. I hear now that Mr. *Baxter*, a Surgeon in *Coupar of Fife*, not far from us, and Dr. *Oliphant* in *Gask* in *Perthshire*, did it with very good Success within these few Years.

In the actual Performance of the Operation they certainly did, or might have observed some things omitted by Authors, and even some not perfectly agreeing with the common Accounts that are given of it. I think it

worth while to notice that in the very cutting, before we got a free Aperture into the *Trachea*, and the Pipe introduced, the Patient felt some Relief; which I thought might be ascribed to the Effusion of Blood in the Operation; a small Quantity whereof evacuated so near, the Part affected could not, according to the true Laws of *Hydraulicks*, and the Observations and Practice of the Ancients (however disagreeing with *Belini's Theory*) but make a more considerable Revulsion, than a much greater taken away at a great Distance. Whence the judicious *Fab. ab Aquapendente* (p. 480.) with very good Reason supposed that by the Derivation here, the Patient would be more apt to feel some Relief than Trouble. Which *Julius Guastavinus* too made no Doubt of in his Dispute upon this Subject against *Aretæus* (See *M. Aur. Severin.* p. 103.) And now their Supposition and Conjecture is confirmed by Experience. And since there continued a greater Flux of Blood to the Wound while it was suppurating, I reckoned the Circulation in the Muscles of the *Larynx* to be with less Force than ordinary, and so probably to contribute to the diminishing the Strength of the Voice, which for a good many Days after the Operation, was observed to be much weaker than it used to be. Which I all along thought was rather owing to this, and the Lowness of his Body by his slender Diet, &c. than to any Hurt of the recurrent Nerves; which being cut, do indeed destroy the Voice, but by their Deepness, are in less Hazard than some in old Times used to think.

In doing the Operation on a living Person, one cannot but remark at the very first, that the *Cannula* should not be made near so short as is ordinarily proposed

posed in Books and chirurgical Lectures: For we found that upon cutting the Parts, especially the *Thyroid Gland* (which is not so much minded in most of the common Descriptions of this Operation as should be) soon become so much tumified, that it will require a Pipe above an Inch long, to penetrate sufficiently into the *Aspera Arteria*. Which is more than double of *Garangeot's* Allowance of six Lines; who is one of the recentest Writers, and has communicated to us all the Surgery the *French* are Masters of. The Leaden Pipe we had prepared not answering the Design, that which we made use of was too long and too small, being the common *Cannula* for tapping in the Dropsy, flatned a little at the End, and hindered by a very thick Compress, perforated in the Middle, from penetrating too deep into the *Trachea*.

The mucous Particles and Steams arising from the Lungs, made a constant weeping of a thin slavery Liquor from the Mouth of the Pipe, part whereof thickening, and stuffing its Cavity, sometimes very much incommoded the Patient's Respiration by it, so as to render it necessary to have it taken out and cleaned. And hence, when some Moderns very precisely bid us put a thin Slice of Sponge, or a bit of Muslin, &c. close over the Orifice of the *Cannula*, to prevent the Ingress of Dust, Downs, or the like, into the Lungs, it confirms what I said before of the Unusualness of the Operation, and looks as if they had only contemplated the Matter *in Abstracto*, as the *Metaphysicians* say, without considering they had not to do with a pure thin dry Air, but with a heterogeneous Fluid, that is moistened and thickened with viscid Particles, which are apt to run together in stiff Concretions. And therefore, though

it must be acknowledged that there would have been less Hazard of a Stoppage, if our *Cannula* had been shorter, and wider, especially at the Mouth, I cannot but think it an ingenious Proposal of one of our Ministers here, to make the Pipe double, or one within another ; that the Innermost might safely and easily be taken out and cleaned when necessary, without any Molestation to the Patient : For it is no small Trouble to him to be obliged to have the Bandage frequently removed, and the Pipe fitted a-new to the Orifice made in the *Trachea*.

And indeed we found no Inconvenience in our Patient's breathing the Air as it passed through the Pipe, without any cleansing or intercepting *Medium*, though the House was none of the cleanest, being an ordinary *Tradesman's* here. But if by a larger, and consequently a more patent Tube, one, especially of more delicate and ticklish Lungs, should be incommoded that Way, I think the Access of Dust, &c. might conveniently enough be hindered by a Piece of Muslin, or thin Hair-Crape, tied slackly about the Neck over the Orifice of the *Cannula*, so however as not to touch it, or to be wetted by the Liquor coming from it.

The Patient was soon perfectly recovered : He breaths, speaks, eats, drinks, and performs all the other Offices of Life, and goes about his Calling as formerly. And now I cannot but notice the needless Pain some Writers are in about healing up the Wound by Bandaging, Sticking, &c. For we found it easily to fill up of itself in a very few Days, by only dressing it every other Day or so with a soft Tent, made less and less every Dressing, and armed in the common Way with *Liniment. Arcaei*. I believe indeed it
would

would have taken a little more Time to heal, if our Patient had been older.

Having, as you will easily perceive, omitted those things that were common or of less Moment, I have set down what seemed most remarkable in the Course of this Operation. Upon which Subject I should not have had so much to say if this elegant Method of rescuing one from imminent Danger, and the most difficult kind of Death, had not been ordinarily described more from Theory and Fancy than from Nature and Practice : And if Surgeons had been accustomed to be half as bold to assist Nature in such an Extremity as both they and many Physicians are sometimes officious to disturb her regular and salutary Steps.

VI. Observationes Cœlestes multifariæ, *Annis* 1728 & 1729. Pekini in Sinis habitæ, & ad Rev. P. Johannem Baptistam Carbone, Soc. Jes. transmissæ; ex ejusdem Cl. Viri Epistola ad Jacobum de Castro Sarmento, M. D. Col. Med. Lond. Lic. & R. S. S.

Congressus Lunæ cum aliquot stellis observati Pekini à Nov. 1728, usque ad Nov. anni 1729.

NOV. die 20. 5^h 0' 42'' mane Luna obtexit stellam *Leonis* locus immersionis erat proxime contra Roccam.

6^h 21' 55'' prodiens Stella stabat in recta cum Reinoldo & Grimaldo; adeoque locus emersionis prope Berosum, & transitus ferme centralis.

Dec.